In re Appln. of Mami et al.
Application No. 10/563,065
Response to Final Office Action of September 26, 2008

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application.

Claim 1 (currently amended): A method of analyzing vocal signals of a speaker, comprising:

using a probability density representing resemblances between a vocal representation of the speaker in a predetermined model and a predetermined set of vocal representations of a number E of reference speakers that do not include the speaker in said predetermined model, [[;]] said predetermined model being an absolute model of dimension D, using a mixture of M Gaussians, in which the speaker is represented by a set of parameters comprising weighting coefficients for the mixture of Gaussians in said absolute model, mean vectors of dimension D and covariance matrices of dimension D×D and wherein the probability density of the resemblances between the representation of said vocal signals of the speaker and the predetermined set of vocal representations of the reference speakers is represented by a Gaussian distribution of mean vector of dimension E and of covariance matrix of dimension E×E, said mean vector and covariance matrix being estimated in a space of resemblances to the predetermined set of E reference speakers;

analyzing the probability density to deduce therefrom information on the vocal signals; and

providing an analysis result from a device and applying the result to an application relating to the acoustic vocal signal of the speaker.

Claims 2–3. (canceled).

Claim 4 (currently amended): The method of claim 1 [[3]], wherein there are N_λ segments of vocal signals for the speaker, represented by N_λ vectors of the space of resemblances with speaker with respect to the E reference speakers is defined as a function of a mean vector of dimension E and of a covariance matrix of the resemblances of the speaker with respect to the E reference speakers.

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Claim 5 (previously presented): The method of claim 4, further comprising:

introducing a priori information into the probability densities of the resemblances with respect to the E reference speakers.

Claim 6 (previously presented): The method of claim 5, wherein the covariance matrix of the speaker is independent of said speaker.

Claim 7 (currently amended): A system for the analysis of vocal signals of a speaker, comprising:

databases for storing vocal signals of a predetermined set of speakers and vocal representations associated therewith in a predetermined model by mixing of Gaussians, as well as databases of audio archives; [[and]]

said predetermined model being an absolute model of dimension D, using a mixture of M Gaussians, in which the speaker is represented by a set of parameters comprising weighting coefficients for the mixture of Gaussians in said absolute model, mean vectors of dimension D and covariance matrices of dimension D×D and wherein the probability density of the resemblances between the representation of said vocal signals of the speaker and the predetermined set of vocal representations of the reference speakers is represented by a Gaussian distribution of mean vector of dimension E and of covariance matrix of dimension E×E, said mean vector and covariance matrix being estimated in a space of resemblances to the predetermined set of E reference speakers; and

a device implementing calculating routines for analyzing the vocal signals using a vector representation of the resemblances between the vocal representation of the speaker and a predetermined set of vocal representations of E reference speakers that do not include the speaker, the device producing an analysis result that is provided to an application relating to the acoustic vocal signal of the speaker.

Claim 8 (previously presented): The system of claim 7, the databases further storing parameters of the vocal signals analysis performed by said means for analyzing.

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Claim 9 (previously presented): The method of claim 1, wherein the application is an indexing of audio documents.

Claim 10 (previously presented): The method of claim 1, wherein the application is an identification of a speaker.

Claim 11 (previously presented): The method of claim 1, wherein the application is a verification of a speaker.

Claim 12 (canceled).